

REMARKS

Claims 10-13 and 17 stand rejected under 35 USC 102 over Lancefield et al (EP 1 111 206). Claim 18 stands rejected under 35 USC 103 over EP '206. EP '206 was cited in a corresponding British patent application. The claims of the International application were prepared having regard to the distinctions between the engine disclosed in this application and that disclosed in EP '206. The distinctions include the following:

1. In accordance with the present invention, as defined in claim 10, an intermediate rocker having a follower acted upon by the cam and a contoured surface that acts on the valve actuator transfers the motion from the cam lobe to the valve actuator. In EP '206, there are two rockers rotating about different centers, the first in contact with the cam, the second in contact with the valve actuator and having a further sliding or rolling interface between the two rockers. Hence it cannot be said that EP '206 discloses "an intermediate rocker mounted on a pivot shaft and having a follower acted on by the cam and a contoured surface that acts on the valve actuator to open and close the valve in synchronism with the rotation of the cam."

2. The intermediate rocker and its pivot shaft move relative to the valve actuator in an arc such as to maintain a constant clearance between the contoured surface of the intermediate rocker and the valve actuator. In EP '206 the valve lifting rocking cam rotates about a stationary axis, whilst the cam following rocker rotates about an eccentric diameter on the same pivot shaft. In practice, in order to maintain a substantially constant clearance between the contoured surface of the intermediate rocker and the valve actuator, the contoured surface of the intermediate rocker acts on a part-cylindrical contact surface of the valve actuator. Claim 10 has been amended to specify this part-cylindrical contact surface. It will be appreciated that requiring the contact surface to be part cylindrical is not intended to exclude the possibility of the contact surface being entirely cylindrical, as illustrated in the embodiment of the invention, and the new claim 19 is directed to this possibility.

3. The axis of the pivot shaft needs to move in an arc around the center of the roller in the valve actuator, maintaining constant clearance in the

system. The axis of the rocker shaft in EP '206 is fixed with respect to the cylinder head and has an eccentric diameter upon which the cam following rocker is mounted. Thus the axis of rotation of the cam following rocker is only able to move about the axis of the rocker shaft. Constant clearance is achieved by the fact that the axis of the valve lifting rocking cam is not movable.

In EP '206, the components 24 and 26 are separate and rotate about difference axes, the axis of the rocking cam 24 being fixed (to provide constant clearance) and the axis of the rocker 26 being movable in an arc about the axis of the cam 24. The intermediate rocker specified in claim 10 (corresponding to the rocker 30 in the embodiment illustrated in FIG. 1 of the drawings) replaces both the cam 24 and rocker 26 in EP '206, and its axis may be moved about the center of the follower in the valve actuator to adjust the lift without introducing clearance.

In view of the foregoing, applicant submits that the invention as defined in claim 10 is not disclosed or suggested by EP '206. Therefore, claim 10 is patentable, and it follows that the dependent claims 11-13, 18 and 19 also are patentable.

Applicant gratefully acknowledges that the examiner has indicated that claim 14 contains allowable subject matter. Claim 14 has accordingly been rewritten in independent form. Claim 14 is allowable and it follows that the dependent claims 15 and 16 also are allowable.

Respectfully submitted,

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